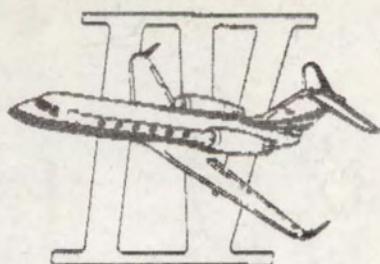




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DUST OFF

~~Army Aeromedical
Evacuation In Vietnam~~



DUST OFF: ARMY AEROMEDICAL EVACUATION IN VIETNAM

by

Peter Dorland

and

James Nanney



*CENTER OF MILITARY HISTORY
UNITED STATES ARMY
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Foreword

From the wheatfields of the Civil War to the jungles and paddies of Vietnam, the United States Army has led the world in adapting modern transport technology to the humanitarian goal of saving the lives of the sick and wounded. Drawing on its first experiments with helicopters in Korea, the Army in Vietnam came to rely almost entirely on the helicopter for medical evacuation. The Dust Off and Medevac helicopter ambulance units tested and perfected for medical use the Army's new helicopter, the UH-1 ("Huey" Iroquois), and developed several new devices, especially the hoist, that helped save thousands of American and allied lives between 1962 and 1973. The pilots of these helicopter ambulances displayed a courage and devotion to duty that earned them widespread respect from soldiers in Vietnam.

This book chronicles the early problems of medical evacuation in Vietnam, recounts the valor of several of the Dust Off crews, and describes the procedures and equipment used to speed the movement of patients to in-theater Army hospitals. It also shows the effect that the helicopter had on traditional Army procedures dating back to the Civil War. It should interest anyone concerned with Army medical history, the Vietnam War, or the problem of administering medical care in war or in times of civilian disasters. The widespread use of the helicopter for medical evacuation in America since the Vietnam War testifies to the broader issues raised by this study, and of the relevance of Army history to the civilian community. It is gratifying that the demand for this work justifies this new reprint.

Washington, D.C.
22 May 1984

DOUGLAS KINNARD
Brigadier General, U.S.A. (Ret.)
Chief of Military History

Preface

During a tour with The Historical Unit, U.S. Army Medical Department, Fort Detrick, Maryland, from 1974 to 1977, Peter G. Dorland, then a captain and a former Dust Off pilot in Vietnam, completed the basic research for this book and drafted a lengthy manuscript. In the first seven months of 1981, as an editor at the U.S. Army Center of Military History (CMH), Washington, D.C., I conducted further research on Dust Off, reorganized and redrafted portions of the original manuscript, and added Chapter 4 and the Epilogue.

The authors accumulated a store of debts, both at Fort Detrick and Washington. Albert E. Cowdrey, chief of the Medical History Branch (CMH), supervised the project, improving the manuscript's prose and organization in many places, and saw that the revision received a review by other historians at the Center: Stanley L. Falk, George L. Mac Garrigle, and Jeffrey Greenhut. Col. James W. Dunn's critical eye also improved the substance of the book. The final editing and preparation of the book for publication was the work of Edith M. Boldan. Arthur S. Hardyman helped design the cover and the map.

Others at the Center who responded to frequent pleas for assistance were Charles Simpson, Col. Mary Van Harn, Charles Ellsworth, Geraldine Judkins, Mary Gillett, Dwight Oland, Graham Cosmas, Vincent Demma, Jeffrey Clarke, and my coworkers in the Editorial Branch.

Without the help of these many people, Peter Dorland and I could not have produced this book. The authors, of course, accept sole responsibility for any errors.

Washington, D.C.
18 January 1982

JAMES NANNEY

The Authors

Peter G. Dorland received a bachelor's degree in biology from Amherst College. From April 1971 to April 1972 he served in Vietnam as an Army lieutenant flying helicopter ambulance missions for "Eagle Dust Off" of the 101st Airborne Division (Airmobile). From 1974 to 1977 he worked on this manuscript at Fort Detrick, Maryland, for the Army Medical Department. He then returned to flying duties, and is currently commanding, as a major, the 247th Medical Detachment at Fort Irwin, California.

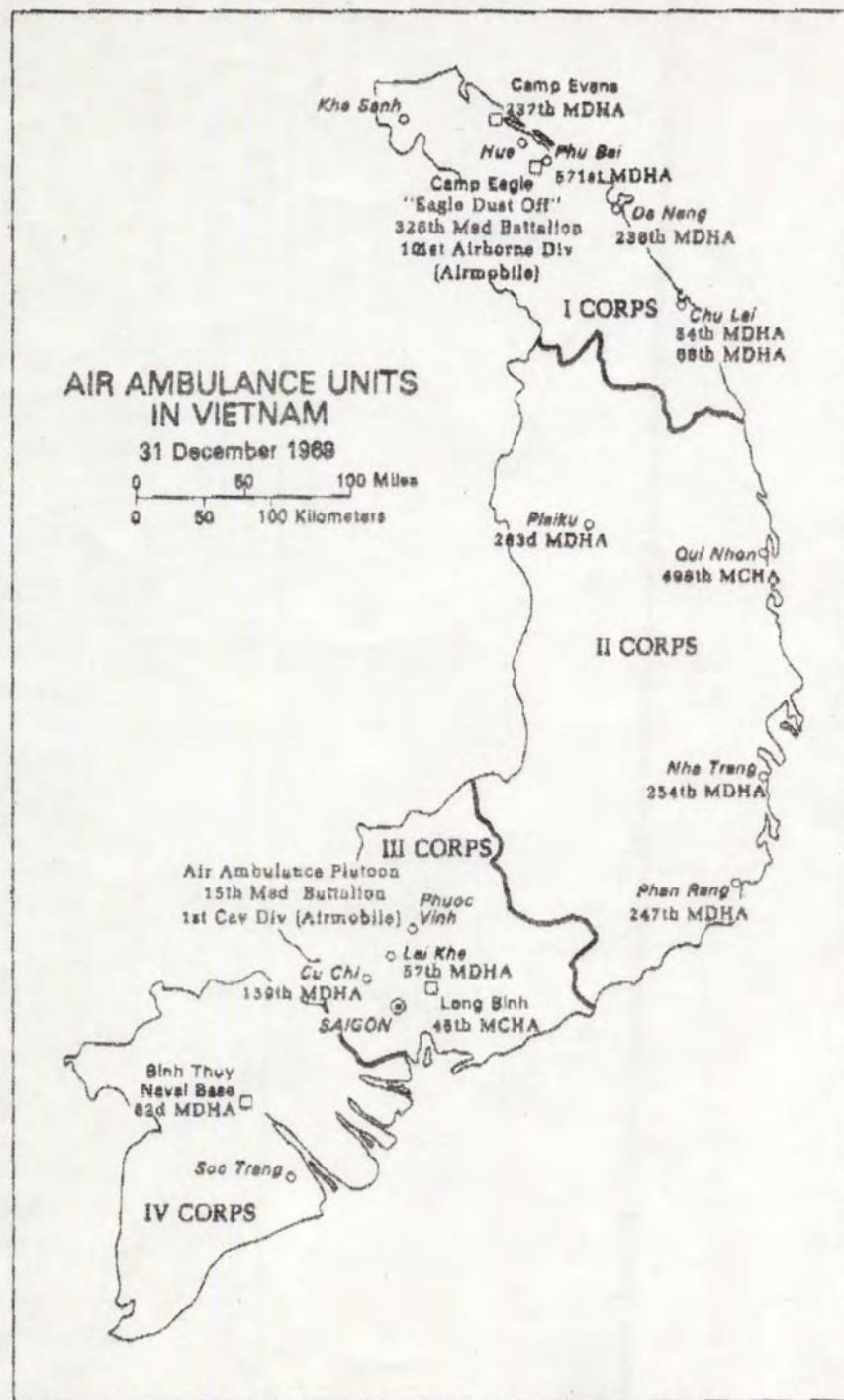
James S. Nanney received his B.A., M.A., and Ph.D. degrees from Vanderbilt University. His fields were American diplomatic history and Russian history. From 1974 to 1980 he worked as a research associate for the George C. Marshall Research Foundation, helping Dr. Forrest C. Pogue examine the postwar career of General Marshall as Secretary of State and Secretary of Defense. In 1977-78, he took a year's leave of absence from the Foundation to teach Russian and recent U.S. history at Murray State University, Murray, Kentucky. Since November 1980 he has been a member of the staff of the Center of Military History. He is currently working on the updating of *American Military History*.

Contents

<i>Chapter</i>		<i>Page</i>
I.	THE EARLY YEARS.....	3
	Early Medical Evacuation	4
	Early Aeromedical Evacuation	6
	The Korean War	10
II.	BIRTH OF A TRADITION	21
	The Struggle Begins	23
	The First Air Ambulance Unit in Vietnam	24
	Dust Off Takes Form	28
	Relations with the South Vietnamese	30
	Kelly and the Dust Off Mystique	32
	A New Buildup	38
	The Crisis Deepens	40
III.	THE SYSTEM MATURES	43
	Origins of the Air Ambulance Platoon	44
	The Air Ambulance Platoon Goes to Work	46
	The Medical Company (Air Ambulance)	49
	The 436th Medical Company (Provisional)	52
	ATTLEBORO	53
	The 45th Medical Company	55
	The Buildup of 1967	56
	Riverine Operations	57
	Dak To	59
	The 54th and the Kelly Tradition	61
	Dust Off Wins Its First Medal of Honor	63
	Dust Off in the Saddle	66
IV.	THE PILOT AT WORK	67
	The UH-1 Iroquois ("Huey")	67
	The Hoist	70
	Evacuation Missions	74
	Evacuation Problems	79
	Enemy Fire	84
	A Turning Point	88

	Page
V. FROM TET TO STAND-DOWN	89
TET - 1968	89
The Drawdown Begins	94
A Second Medal of Honor	96
VNAF Dust Off	98
Cambodia	101
A Medevac in Peril	102
Laos	106
Papa Whiskey	110
Stand-Down and Ship Out	113
EPILOGUE	115
Statistics	115
Doctrine and Lessons Learned	117
A Historical Perspective	121
BIBLIOGRAPHICAL NOTE	125
Articles	125
Books and Studies	127
INDEX	129
MAP	2

**DUST OFF:
ARMY AEROMEDICAL
EVACUATION
IN VIETNAM**



The small outposts for the past twenty-four hours had been held by defenders with occasional calls for help had been made. The call for help had brought in the enemy. But neither could detect the Company. The dawn the outpost could see the number of perimeter patrols. No sooner had the fire. Two of the soldiers had to be sent back to the safety of the base and the others were captured.

While the men were waiting for the telephone operator to answer, the pilot ran to his waiting operations officer and said that gunships would be available in the next few minutes. The operations officer confirmed the route, and the pilot started his route, out across the occasional village, heading west.

Five minutes later, the gunship team radioed that they were closing on the target. As the gunship approached, the enemy opened fire. The gunship returned fire with smoke grenades, and the gunship was overhead. As soon as the gunship had loaded the wounded, the gunship was secured, the pilot radioed to the hospital, radioing for medical bearers from the emergency room at the hospital.

would hover nearby to extricate the crews if trouble developed and to evacuate any remaining ARVN casualties. Since all their Medevacs were shot up, destroyed, or committed elsewhere, the 1st Cavalry had to borrow three nondivisional Dust Off helicopters. At 0930 next morning ARVN and American howitzer batteries started laying a barrage of smoke rounds in the area to create a screen for the upcoming rescue. Just before the operation began, four Cobras fired more smoke rounds. At 1145 the flight of three Medevacs with three cobras on each side started into the area. The first ship in loaded Modica and his crew and flew out. The second extracted several ARVN wounded and also safely left the area. An enemy rocket hit the third ship as it took off with two remaining ARVN casualties, but the crew brought the ship down without further injuries and was quickly rescued. The next day nine pilots and crewmen involved in this rescue received Silver Stars. Sergeant Rocco won a Medal of Honor for his part in saving Modica and most of his crew.

Laos

By October 1970 allied intelligence clearly showed two very disturbing facts. After recovering from the setback inflicted by the allied attack in Cambodia, the enemy was making plans to strangle Phnom Penh, depose the Lon Nol government, and reopen their supply routes by retaking the port of Kompong Som on the Gulf of Thailand. Also, the North Vietnamese Army was improving its road nets in Laos, building up supplies, and sending reinforcements, all apparently in preparation for large-scale offensives in I Corps Zone. Starting in early January 1971 the U.S. XXIV Corps and the South Vietnamese Joint General Staff began planning for a preventive strike on the enemy bases and lines of communication between the northwest border of I Corps Zone and the Laotian city of Muang Xepo. In keeping with President Nixon's Vietnamization program, the South Vietnamese Army was to supply the ground combat forces while the United States supplied air and artillery support. U.S. forces were forbidden to set foot on Laotian soil.

Laos turned into Dust Off's greatest test in the Vietnam war. The complexity and offensive character of the operation presented the allies a new problem: the helicopter transport and evacuation of large forces in rapidly changing tactical situations. From 8 February through 9 April 1971 U.S. aircraft, including Air Force B-52's and some 650 Army helicopters, transported ARVN troops into Laos, gave them covering fire, and evacuated their wounded and dead. The U.S. units involved were reinforced contingents from the 101st Airborne Division (Airmobile), 5th Infantry Division (Mechanized), and

FROM TET TO STAND-DOWN

23d ("Americo") Infantry Division. All operated under the command of Headquarters, XXIV Corps. The offensive accomplished one objective: it delayed the enemy at least several months. But it showed that even with U.S. support the ARVN forces lacked the leadership to prevent heavy losses—approximately 50 percent casualties.

The ARVN part of this joint, four-phased operation was called LAM SON 719; the U.S. part, DEWEY CANYON II. Between 30 January and 7 February the allies were to clear western Quang Tri Province and the east-west Route 9 as far west as the Laotian border, establishing forward U.S. bases at the abandoned Khe Sanh combat base and fire support base Vandegrift. In Phase II between 8 February and 6 March the South Vietnamese would cross the border into Laos, establish fire support bases, and press on to Muang Xepo. During the next three days, or Phase III, the South Vietnamese would locate and destroy enemy caches and installations in and around Muang Xepo. In Phase IV all forces would gradually withdraw from Laos either along Route 9 or along a more southern route.

All of this information was so tightly held for security reasons that medical planners were unaware of the impending operation until the last few days of January. Finally the XXIV Corps Surgeon, the senior medical adviser in I Corps Zone, and the commander of the ARVN 71st Medical Group received a partial briefing on the objectives and plan of execution. They set to work immediately, realizing that plans for medical support had to be hastily drawn up. Fortunately, both the ARVN and U.S. medical units had stockpiled considerable reserves of supplies in anticipation of a 1971 Tet offensive. Because of the paucity of information, casualty estimates had to be extremely rough. In fact, because of the minimal resistance expected from the supposedly rearguard enemy troops in the area, first predictions were for low casualties.

After the first briefings, the 67th Medical Group immediately began to give South Vietnamese units additional training in the use of U.S. medical evacuation. The ARVN interpreters assigned to work with the Dust Off crews were given as much training as the week's busy schedule permitted. After the 1st Brigade, 5th Infantry Division, completed its two-pronged drive west to Khe Sanh, it dug in at that base with two 101st Airborne Eagle Dust Off helicopters standing by. Khe Sanh served as the forwardmost site of medical support for the eleven U.S. battalions working between there and the border. The Dust Off helicopters also stood ready to assist the forty-two South Vietnamese maneuver battalions assigned to the operation. Dust Off helicopters backhauled U.S. casualties to the 18th Surgical Hospital at Quang Tri once they were able to travel. Two other Dust Off aircraft stationed at the 18th were to cover the land north to the Demilitarized Zone and west to the base named Rock Pile on Route 9. All four of these ships were committed to area sup

port. On 5 February the 67th Medical Group put a liaison officer at the 18th Surgical to respond better to the needs of the U.S. forces.

Meanwhile the ARVN medical service set up its hospital eight kilometers south of Khe Sanh at Bach Son. The South Vietnamese set up tents and excavated bunkers. The facilities included two operating rooms, an X-ray room, and fifty underground beds. The main Vietnamese hospital for LAM SON 719 was near the coast, at Dong Ha, at the intersection of Routes 1 and 9.

The Laotian operation presented the problem of suddenly coordinating aeromedical evacuation units whose work so far had usually been at scattered sites and, especially in the detachments, under only tenuous control by superior organizations. Because of the dangers of the missions and the direct involvement of most of the resources of two air ambulance detachments—the 237th and the 571st—Col. Richard E. Bentley, commander of the 61st Medical Battalion and aviation staff officer of the 67th Medical Group, ordered that either the commander or operations officer of the 571st be physically present at the Khe Sanh operations bunker to help regulate both the 237th and 571st. This order stood until the difficulty of controlling both fixed and rotary-wing aircraft and coordinating them with artillery strikes bombing, and ground maneuvers finally forced the XXIV Corps to request the 67th Medical Group for operational control of the two detachments. The 67th consented. The XXIV Corps assigned operational control of the detachments to the 326th Medical Battalion of the 101st Airborne, which then controlled the operations of all evacuation helicopters at Khe Sanh and Quang Tri. Two other MEDCOM Dust Off units, the 236th Detachment and the 498th Medical Company, also furnished general support for northern I Corps and helped backhaul patients from the 18th Surgical Hospital at Quang Tri and the 85th Evacuation Hospital at Phu Bai to the 95th Evacuation Hospital at Da Nang.

When Phase II of the operation began, two MEDCOM Dust Offs joined the Medevacs and Eagle Dust Offs camped at Khe Sanh to support the invasion. Two of the four ships were put under the operational control of the 101st Combat Aviation Group, primarily to cover combat assaults and pull downed crews from Laos. The U.S. medical staff quickly set up a few standard procedures for the incursion. Since no U.S. advisers would accompany the ARVN ground troops into Laos, all medical evacuation missions across the border had to have an ARVN interpreter on the aircraft. Once the heavy enemy antiaircraft defenses in Laos became apparent, the staff decided that gunships would have to cover the air ambulances once they crossed the border. Finally, all evacuation requests would have to pass through a tactical operations center, preferably that of the ARVN I Corps, rather than go directly to the aircraft commanders.

During the first three weeks of the operation, the air ambulance

crews complained vociferously. The larger concept of the operation had not been made clear to them, and the lack of gunship cover, the poor communications, and the false information on area security and casualties suggested to them that the operation was a mess. The further the South Vietnamese penetrated into Laos, the more intense became the antiaircraft fire and the indirect fire on the landing zones. As Phase II drew to a close, however, some of the operating procedures smoothed out. Dust Off representatives now sat in the divisional tactical operations centers; ground commanders overcame much of their reluctance to talk with helicopters; and gunship cover became routinely available. Coordination of divisional and nondivisional air ambulances improved markedly once the evacuation requests were funneled to a single Dust Off operations center at Khe Sanh.

Efficiency suffered most of all from the bad weather. The area east of the mountains was still in the winter monsoon season. At the same time, the weather at Khe Sanh and to the west would often be flyable. Since it was on a high plateau, Khe Sanh itself often required instrument flight while the nearby areas were under visual flight rules. Often an aircraft took off from Khe Sanh in the late afternoon, flew a pickup from Laos, and then had to fly all the way back to Quang Tri to land because of poor visibility and low ceilings at Khe Sanh. On twenty-four of forty-four days of the Laos operation, low ceilings and reduced visibility delayed flight schedules. On some days there were no flights at all because of the weather.

Efficiency also suffered from the poor arrangements for backhauls. During Phase I of the operation, patients at Khe Sanh were placed on fixed-wing resupply ships for medically unattended flights south to Da Nang or Tan Son Nhut. But this practice was not sanctioned and ceased early. On 12 February at the request of the Surgeon of the U.S. XXIV Corps, the 101st Combat Aviation Group began furnishing two CH-47's each day to backhaul routine cases from the ARVN hospital at Bach Son. But this was inadequate. Dust Off aircraft at Khe Sanh still had to backhaul emergency cases to Dong Ha. As casualties mounted, the backhauls impaired Khe Sanh's ability to respond rapidly to requests for field evacuation. The medical system had control of too few aircraft to discharge all of its responsibilities.

Poor coordination of gunship support also became a key obstacle to air ambulance missions. On 24 February, mission response time rose to seven hours because of delayed gunship protection. Finally, after several complaints by the air ambulance crews, the 101st Airborne and the XXIV Corps agreed to dedicate some gunships to air ambulance coverage. When an air ambulance launched from Khe Sanh, the 101st Combat Aviation Group had gunships primed to go with it.

two teams were on standby during the day and one at night. The 101st Group also had a fire team positioned at Dong Ha for Dust Off protection. But gunship support for all the missions into Laos was still impossible, since there were not enough gunships available to satisfy all the high priority combat and medical missions. The problem continued until 25 February, when the XXIV Corps gave Dust Off the highest priority for gunship support regardless of the tactical situation or other requests. Even so, the enemy antiaircraft fire was so intense and the flight routes so restricted by weather and geography that many Dust Off crews resumed the old practice of flying all missions in pairs, to allow one crew to immediately recover its downed teammate.

North Vietnamese intelligence had given the enemy ample time to deploy an extensive, well-integrated, and highly mobile air defense system throughout the Xe Pon area of Laos. Many enemy antiaircraft weapons were radar-controlled, and Dust Off pilots monitoring their VHF radios came to recognize the "wheep wheep" of the radar sweeps and take evasive action. But the North Vietnamese had spread some 750 medium caliber antiaircraft machine guns along Route 9 and the valley of the Xe Pon River leading west to Muang Xepon. The North Vietnamese relocated most of their antiaircraft weapons daily, making their detection and destruction a difficult task.

The North Vietnamese also placed mortar, artillery, and rocket fire on every potential landing zone. Each zone was assigned a heavily armed team of ten to twelve men. Every airmobile operation, including what normally were single ship Dust Off missions, had to be worked out and coordinated, with fire support, armed escort, and a recovery plan. As soon as a mission request came in, a command-and-control ship, gunships, and the air ambulance would crank and launch. This medical evacuation package would rendezvous near the Laotian border and fly across. En route to the pickup, the command ship helped with navigation and steered the group around the antiaircraft sites. As it neared the destination, the air ambulance would thread its way through a corridor of friendly artillery, tactical air support, and gunships. While the ambulance was on final approach, on the ground, and departing, the gunships would circle overhead, giving nearly continuous protective fire. After the pickup, the group flew a different corridor back to Khe Sanh.

Papa Whiskey

One Dust Off mission during the Laos operation illustrated both its chaotic finale and the bravery of a Dust Off crewman. On 18 February a North Vietnamese regiment assaulted fire support base Ranger North, nine kilometers inside Laos. About 1130 the South Vietnamese 39th Ranger Battalion holding the base asked the Dust

Off operations center at Khe Sanh to evacuate its many seriously wounded. A Dust Off aircraft, with a crew from both the 237th and 571st Detachments, took off and headed west. On their first attempt to land they took such heavy fire that the commander, CW2 Joseph G. Brown, aborted his approach. A second time around he tried a high speed descent and made it in. Just before the ship touched down the enemy opened fire again and continued firing while the crew loaded the wounded Rangers. Uninjured Rangers trying to escape the base also poured into the ship, and Brown had trouble lifting it off. Just as he cleared the ground, a mortar round exploded in front of the cockpit, shattering the console and wounding him. The ship crashed. Rangers scattered from the wreck and the Dust Off crew dragged Brown to a ditch for temporary shelter. Leaving him with his pilot, CW2 Darrel O. Monteith, the crew chief and two medical corpsmen started running toward a bunker. A mortar round exploded and blew one corpsman, Sp4c. James C. Costello, to the ground. His chest protector had saved his life, and he stood up, shaken but uninjured. The same explosion blew shrapnel into the back and left shoulder of the crew chief, Sp4c. Dennis M. Fujii. A second mortar round wounded the other corpsman, Sp4c. Paul A. Simcoe. The three men staggered into the bunker.

Shortly before 1400 an Eagle Dust Off ship tried to rescue them, but automatic weapons fire drove it off, wounding its pilot. At 1500 another Eagle Dust Off ship landed under heavy gunship cover. The wounded Dust Off crew, except for Fujii, raced to the Eagle ship. A mortar barrage falling around it kept him pinned in his bunker, where he waved off his rescuers. To escape the enemy fire the Eagle pilot had to take off, leaving Fujii as the sole American on the fire base, which was now surrounded by two North Vietnamese regiments. Another Dust Off ship soon arrived to pick up Fujii, but enemy fire forced it to return to Khe Sanh.

At 1640 Fujii found a working PRC-25 radio and started broadcasting, using the call sign "Papa Whiskey." He told the pilots high overhead that he wanted no more attempts to rescue him because the base was too hot. Using what medical knowledge he had picked up, he began tending to the wounded Rangers who surrounded him.

That night one of the North Vietnamese regiments, supported by heavy artillery, started to attack the small base. For the next seventeen hours Papa Whiskey was the nerve center of the allied outpost, using his radio to call in and adjust the fire of U.S. Air Force AC-130 flare ships, AC-119 and AC-130 gunships, and jet fighters. Working with the Air Force's forward air controllers, he coordinated the six flareships and seven gunships that were supporting Ranger North. Twice during the night the enemy breached the perimeter, and only then did Fujii stop transmitting to pick up an M16 and join the fight.

With the Ranger commander's permission, Fujii brought the friendly fire to within twenty meters of the base's perimeter, often leaving the safety of his bunker to get a closer look at the incoming friendly rounds. He worked all night and into the next morning, bringing in more than twenty coordinated gunship assaults.

The next afternoon an all-out rescue attempt began. A fleet of twenty-one helicopters descended on the base, the gunships firing on every possible enemy position. With Fujii also calling in artillery strikes, the allies ringed the camp with continuous fire. Even so, hostile fire was so intense that the commander of the rescue fleet, Lt. Col. William Peachey, prepared to send down a single ship rather than risk a formation. Fujii asked that as many of the 150 ARVN casualties as possible be evacuated before him, but Peachey ordered him to jump on the first ship that landed. Maj. James Lloyd and Capt. David Nelson left the formation, descended into the valley, then flew up a slope to the fire base, hugging the trees, and dropped in unharmed. Fujii scrambled on board with fourteen Rangers. Having recovered from their surprise, the enemy opened fire on the ship as it lifted off. Raked with bullets, it caught fire and the cockpit filled with smoke. The pilots headed toward Ranger South, fire base of the 21st Ranger Battalion about four kilometers southwest. They landed and everyone jumped from the burning ship as its M60 rounds started to cook off in the flames. Miraculously, no one was injured. Ranger South itself soon came under heavy enemy attack, but Fujii's work was over. Finally, at 1600 on 22 February, 100 hours after he was wounded, he was admitted to the 85th Evacuation Hospital at Phu Bai. He had helped save 122 Rangers. He was quickly awarded a Silver Star, which was later upgraded to a Distinguished Service Cross.

Fujii's mission was only part of an operation that had turned into an embarrassing scramble to safety. According to the after action report of the 61st Medical Battalion: "During the last phases of Operation Lam Son 719 enemy activity further intensified. Landing zones were dangerously insecure. Air Ambulances landing to pick up wounded were swarmed with fit and able soldiers seeking a way out of their increasingly precarious position. Medical evacuation pilots reported complete lack of discipline during the last days of the operation coupled with extremely hazardous conditions." Evacuation ships, and indeed any aircraft landing near the South Vietnamese units, were rushed by throngs of able-bodied soldiers trying to escape. One Eagle Dust Off ship, a UH-1H with a normal load of eleven passengers, landed for a pickup and had to take off almost immediately because of small arms fire and mortar rounds in the landing zone. After the pilot set his ship down in Khe Sanh, his crew counted thirty-two ARVN soldiers on board, all without weapons or equipment, on

ly one of whom was wounded. To prevent ARVN soldiers from hitching a ride back on the sides of the aircraft, some crews resorted to coating the skids with grease.

By early April the Dust Off and Medevac ships had saved hundreds of lives. In the two-month operation they flew some 1,400 missions, evacuating 4,200 patients. Six crewmen were killed and fourteen wounded. Ten air ambulances were destroyed, about one out of every ten aircraft lost in the operation. On 8 April, once the incursion was over, XXIV Corps gave up its operational control of the MEDCOM air ambulances. Dust Off pilots had seen their last major operation of the war.

Stand-Down and Ship Out

The phased withdrawal of American forces from Vietnam, begun in the summer of 1968, continued until, on 11 August 1972, the last American ground combat unit stood down at Da Nang. The American venture in this small, remote Asian country had come full circle. More than seven years earlier, on 8 March 1965, the first U.S. ground combat forces had landed on these same beaches. In December 1961 the first U.S. military units, two helicopter companies, had arrived in Saigon to aid the South Vietnamese government. It had been the longest war in United States history, and almost half of it had been devoted to the withdrawal.

The drawdown of medical support paralleled that of combat forces, but lasted a little longer because of continuing medical needs of noncombat U.S. forces in Vietnam. In the early months of 1972 MEDCOM air ambulances decreased from forty-eight to thirty, leaving five detachments: the 57th, 159th, 237th, 247th, and 571st. In June 1972 the Air Ambulance Platoon of the 1st Cavalry stood down, leaving all air ambulance missions to the few remaining nondivisional Dust Off units. In February 1973 three of the last four Dust Off detachments—the 237th, 247th, and 571st—stood down. In February the 57th Detachment, the first to arrive in Vietnam and whose early commander, Maj. Charles Kelly, had created the Dust Off mystique, prepared to become the last to leave, closing down its operations at Tan Son Nhut. On 11 March it flew the last Dust Off mission in Vietnam, for an appendicitis case.

After they turned in their aircraft on 14 March, the few remaining members of the 57th had little to occupy their time. Some simply took pleasure in building their sun tans. A few tried to readjust their daily rhythms to Stateside time; they reset their clocks and began to live at their home hours, though this meant getting up in the dark and sleeping part of the day. Every now and then they had to check on their departure date, but no one demanded any work of them. On 28

March they received orders to move to Camp Alpha, the personnel staging facility at Tan Son Nhut, where they were restricted to the compound pending their flight out. Finally, at 0100 on the twenty-ninth, they boarded buses for a ride to their C-141 transport. The drivers halted the buses some fifty feet from the floodlighted jet, and kept the bus doors closed while a double file of people formed between the bus and the boarding stairs. The two lines were composed of Americans, South Vietnamese, North Vietnamese, and Viet Cong, all members of the Four Power Joint Military Commission that was supervising the implementation of the peace treaty.

The bus door opened, and one at a time the departing personnel of the 57th marched through this double file. They had been part of the last U.S. Army operational personnel in South Vietnam. The same day the Military Assistance Command, Vietnam, lowered its flag and ceased to function for the first time since 1962. The ground war in Vietnam was completely in the hands of the Republic of Vietnam for the first time in twenty-seven years. During a long, cruel, and ultimately losing struggle, Dust Off personnel had comported themselves with courage and honor, proving that a band of brave and dedicated pilots and crewmen could make this new mode of medical evacuation work extremely well, even against well-prepared enemy ground fire.

Epilogue

The Vietnam War had its precedents in American military history. At the turn of this century the U.S. Army in the Philippines, only a few years after the end of its trials during the Indian Wars of the American frontier, again fought an enemy that often used guerrilla tactics. In 1898 many American soldiers serving in Cuba suffered the torments of tropical disease. World War II in the Pacific, although conventional in nature, once more subjected American soldiers to the hardships of warfare in the tropics. But advances in weapons and military transport made the Vietnam War a virtually new experience for the American armed forces.

This was especially true for the Army Medical Department. Its experiences with patient evacuation in the Korean War had only foreshadowed the problems it would confront in South Vietnam. Helicopter ambulances in Korea had rarely needed to fly over enemy-held areas, and the terrain of Korea, although rugged, lacked the thick jungles and forests that obstructed the air ambulances in Vietnam. While Army hospitals in Korea had been highly mobile, moving often with the troops, the frontless war in Vietnam resulted in a fixed location for almost all hospitals. French armed forces had used the helicopter for medical evacuation in their unsuccessful struggle in Indochina, but since they had used aircraft that were soon obsolete, their experiences could offer little guidance to the Americans who arrived in Vietnam in 1962.

Statistics

Records produced by the various U.S. Army air ambulance units in Vietnam show that the Medical Department's new aeromedical evacuation system performed beyond all expectation. Although figures are lacking for some phases of the system's work, enough reports have survived to permit an assessment of what it accomplished. It is possible both to describe the number and types of patients transported and to compare the risks of air ambulance missions with those of other helicopter missions in the Vietnam War.

Air ambulances transported most of the Army's sick, injured, and wounded who required rapid movement to a medical facility, and also many Vietnamese civilian and military casualties. From May 1962 through March 1973 the ambulances moved between 850,000 and